

F.BF.B.3: Graphing Exponential Functions

1 If $a > 0$, which function represents the reflection of $y = a^x$ in the y -axis?

1) $y = -a^x$

2) $y = \left(\frac{1}{a}\right)^x$

3) $y = \left(\frac{1}{a}\right)^{-x}$

4) $x = a^y$

2 Which transformation best describes the relationship between the functions $f(x) = 2^x$ and

$g(x) = \left(\frac{1}{2}\right)^x$?

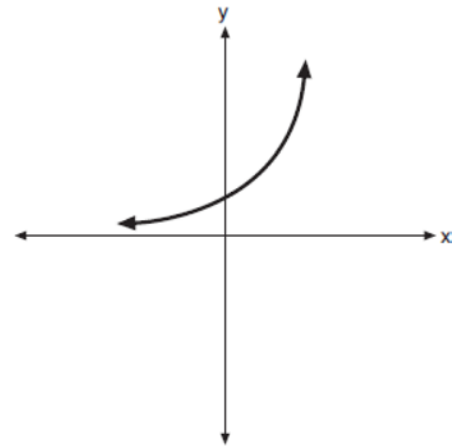
1) reflection in the line $y = x$

2) reflection in the origin

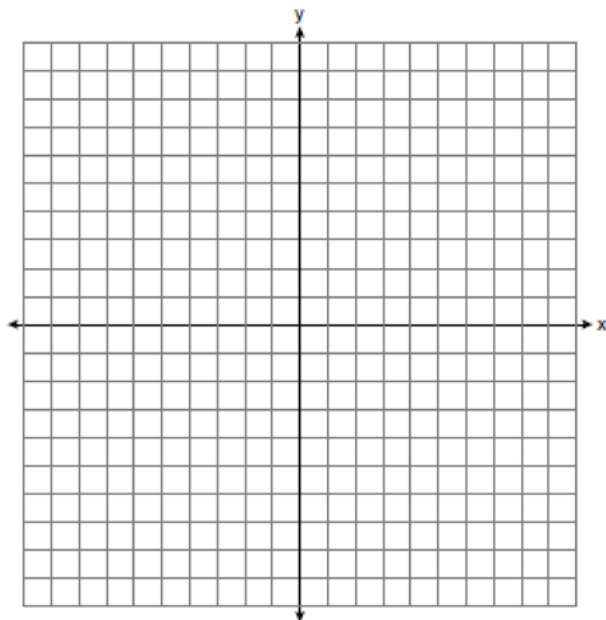
3) reflection in the x -axis

4) reflection in the y -axis

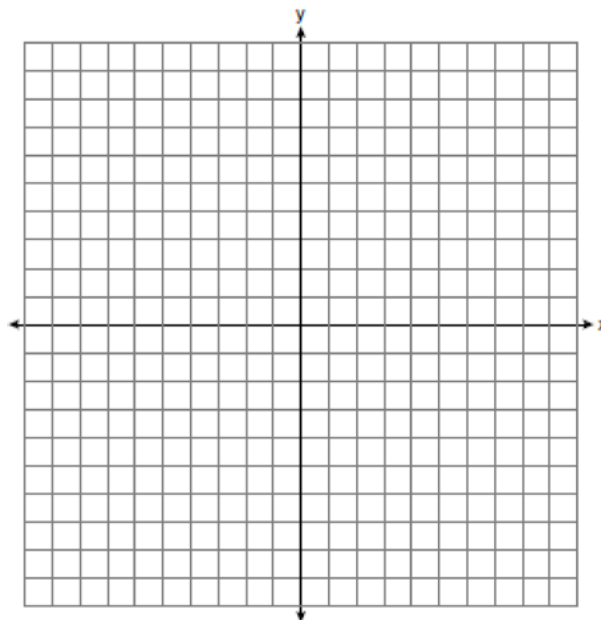
3 The graph of the function $f(x) = a^x$ is shown on the accompanying set of axes. On the same set of axes, sketch the reflection of $f(x)$ in the y -axis. State the coordinates of the point where the graphs intersect.



- 4 The graph of the equation $y = \left(\frac{1}{2}\right)^x$ has an asymptote. On the grid below, sketch the graph of $y = \left(\frac{1}{2}\right)^x$ and write the equation of this asymptote.



- 5 On the axes below, for $-2 \leq x \leq 2$, graph $y = 2^{x+1} - 3$.



F.BF.B.3: Graphing Exponential Functions Answer Section

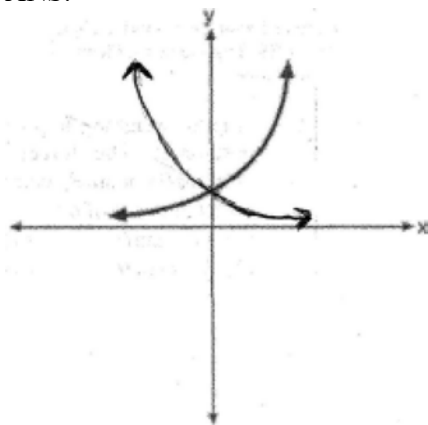
1 ANS: 2 REF: 080919b

2 ANS: 4

$$2^{-x} = \left(\frac{1}{2}\right)^x \text{ and } \left(\frac{1}{2}\right)^{-x} = 2^x$$

REF: 060613b

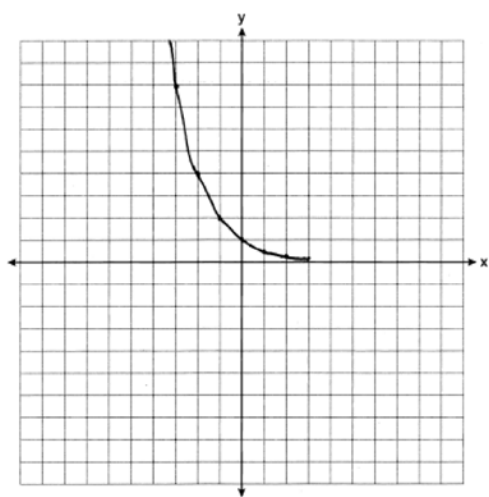
3 ANS:



(0,1)

REF: 080721b

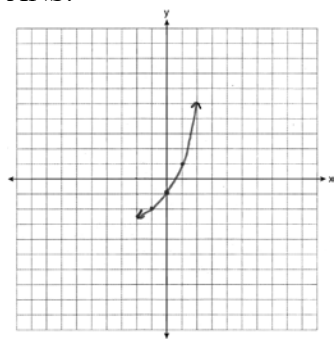
4 ANS:



$y = 0$

REF: 061031a2

5 ANS:



REF: 011233a2